

In the Claims:

Claims 1-26 (canceled)

27. (currently amended) A method of mixing fluid to saturate liquids with gases comprising:
inserting fluid into a fluid mixer via a fluid inlet in a cylindrical donut housing;
flowing the fluid through a distribution channel in a ring having a plurality of grooves,
the ring being concentric to the cylindrical donut housing, the ring having an outer
diameter on a first end that is smaller than a diameter of the cylindrical donut
housing thus defining the distribution channel;
forcing the fluid in a downwardly spiral in a cylinder by passing the fluid through the
plurality of grooves and into the cylinder concentric with the ring and surrounded
by the ring, the cylinder in fluid communication with the distribution channel via
the grooves;
inserting gas into the cylinder via a gas inlet, the gas passing through a porous gas
diffuser disposed within the cylinder, the diffuser having an impervious flat top;
dissolving gas exiting the porous diffusion into pressurized circulating fluid, the fluid
flowing in a generally downward spiral direction, the gas bubbling upward;
mixing the downward spiraling fluid with the upwardly bubbling gas in a mixing zone in
the cylinder; and
removing a fluid saturated with gas at a fluid outlet located on a bottom surface of the
cylinder.
28. (original) The method of claim 27 further comprising providing the diffuser having an
inverted cone shape.

Claims 29-31 (canceled)

32. (original) A method of saturating fluids with gases comprising:

inserting fluid into a fluid mixer via a fluid inlet in an upper housing, the upper housing having a cylindrical donut with the fluid inlet;

flowing the fluid through a distribution channel in a ring having a plurality of grooves, the ring being concentric to the cylindrical donut housing, the ring having an outer diameter on a first end that is smaller than a diameter of the cylindrical donut housing thus defining the distribution channel;

forcing the fluid in a downward in a cylinder by passing the fluid through the grooves and into the cylinder concentric with the ring and surrounded by the ring, the cylinder in fluid communication with the distribution channel via the grooves;

injecting gas to the fluid leaving the grooves with an orifice ring in fluid communication with a gas inlet;

separating excess gases from liquids in a gas separation chamber in the upper housing;

discharging excess gases through a gas outlet on the upper housing; and

removing saturated liquid from the cylinder via a saturated liquid outlet located at the bottom of the cylinder.

33. (original) The method of claim 32 further comprising:
- regulating the amount of gas entering gas inlet of the orifice plate; and
- regulating the amount of gas exiting the gas outlet.

Claims 34-36 (canceled)

37. (original) A method of mixing fluids comprising:
- inserting a first fluid into a fluid mixer via a first fluid inlet in an upper donut housing;
- flowing the fluid through a distribution channel in a ring having a plurality of grooves, the ring being concentric to the upper donut housing, the ring having an outer

diameter on a first end that is smaller than a diameter of the upper donut housing thus defining the distribution channel;

forcing the first fluid in a downwardly spiral in a cylinder by passing the fluid through the grooves and into the cylinder, the cylinder concentric with the ring and surrounded by the ring, the cylinder in fluid communication with the distribution channel via the grooves;

injecting a second fluid into the fluid leaving the grooves with an orifice ring in fluid communication with a second fluid inlet; and

removing the mixed fluid from the cylinder via a mixed fluid outlet located at the bottom of the cylinder.

38. (new) A method of mixing fluids comprising:

inserting a first fluid into a fluid mixer via a first fluid inlet in an upper donut housing;

flowing the first fluid through a distribution channel in a ring having a plurality of grooves, the ring being concentric to the upper donut housing, the ring having an outer diameter on a first end that is smaller than a diameter of the upper donut housing thus defining the distribution channel;

forcing the first fluid in a downwardly spiral in a cylinder by passing the fluid through the grooves and into the cylinder, the cylinder concentric with the ring and surrounded by the ring, the cylinder in fluid communication with the distribution channel via the grooves;

injecting a second fluid into the first fluid for mixing therewith; and

removing the mixed fluid from the cylinder via a mixed fluid outlet located at the bottom of the cylinder.

39. (new) The method of claim 38 wherein the second fluid is a gas, and further comprising:
inserting the gas into the cylinder via a gas inlet, the gas passing through a porous gas diffuser
disposed within the cylinder, the diffuser having an impervious flat top, the dissolving
gas exiting the porous diffuser into pressurized circulating fluid, the circulating fluid
flowing in a generally downward spiral direction, the gas bubbling upward; and
mixing the downward spiraling fluid with the upwardly bubbling gas in a mixing zone in the
cylinder before removal of the mixture.
40. (new) The method of claim 38 further comprising injection the second fluid into the first
fluid leaving the grooves with an orifice ring in fluid communication with a second fluid inlet.
41. (new) The method of claim 40 in which the second fluid is a gas.
42. (new) The method of claim 41 further comprising:
separating excess gases from liquids in a gas separation chamber in the upper housing; and
discharging excess gases through a gas outlet on the upper housing.
43. The method of claim 42 further comprising:
regulating the amount of gas entering the gas inlet of the orifice plate; and
regulating the amount of gas exiting the gas outlet.
44. The method of claim 40 in which the second fluid is a liquid.